

# National Defense Industrial Association

Armaments for the Army of the  
Future

24th June 1998

David Leslie

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## Presentation Outline

Background

Why CT Technology is required

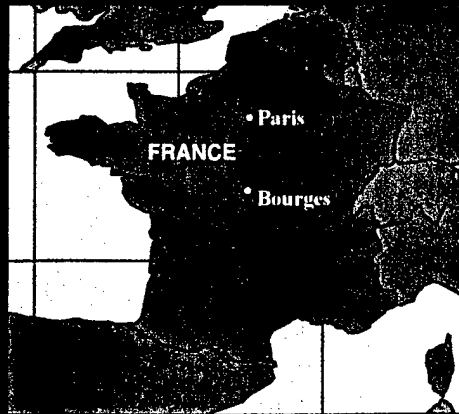
Where CT Technology is today

Integration benefits of CT Technology

Benefits of Ownership

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# CTA International



Investment since 1994 - \$30M  
 Investment commitment - \$20M

CTAI is a joint venture company 50/50 BAE and Giat Industries.

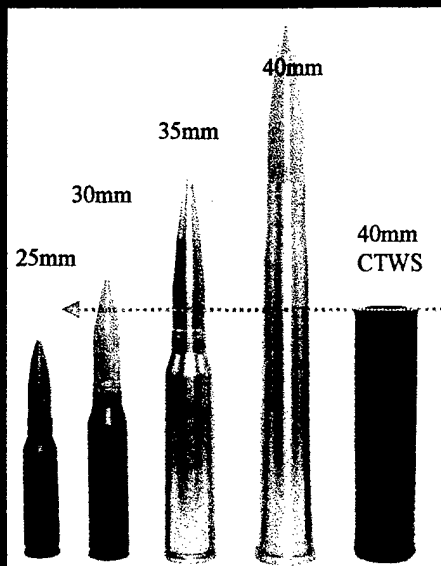
Dedicated team, 33 strong. British and French engineers and scientists

Total company focused on development of 40mm Cased Telescoped Weapon System

Program funded from industrial investment

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## Ammunition Comparison

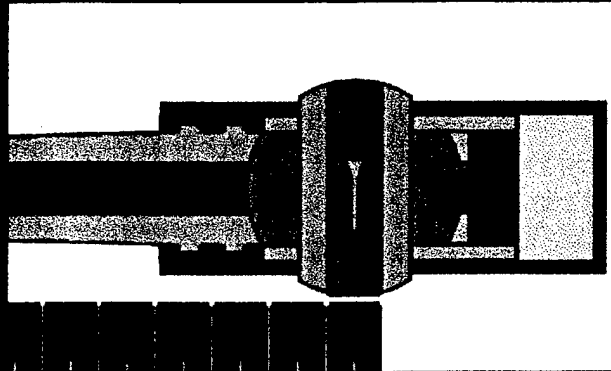


30% saving in volume for the same performance

30% more performance for the same volume

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## CTWS Rotating Chamber "Push Through" Concept



Design Enhances Reliability and Maintainability

- Push through capability enables simpler gun mechanism

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## Cannon Comparison

Front of Feed



Bushmaster 25mm

CT 2000 (65x255)

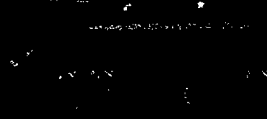
Bushmaster 35mm

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# The Need for CT Technology



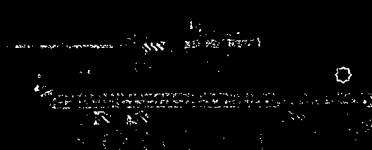
CVR(T) in service 1960's



The Threat 1970's



Conventional Armament drives size



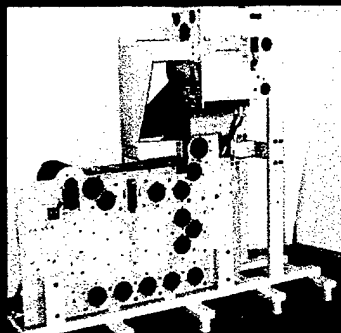
The Threat 2000's



CT Technology reduces size

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# Cased Telescoped Weapon System



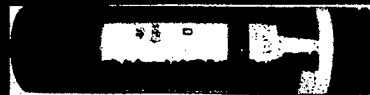
Mission Load  
Feed System



40mm CT Cannon



APFSDS



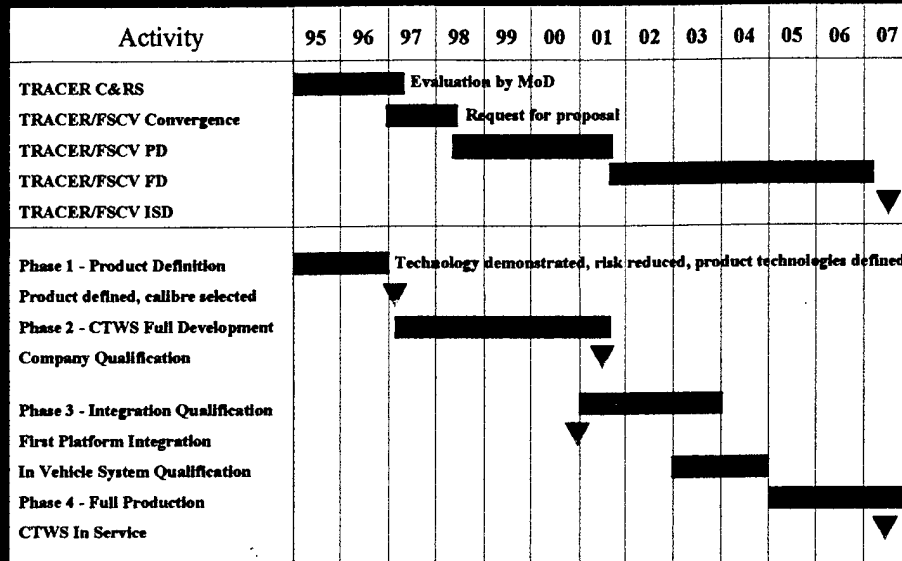
GPR

APFSDS - Tracer/Scout compliant  
GPR - Tracer/Scout compliant  
System designed for ease of integration

- System size
- Modular configuration

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## CTWS - The Program



PD - Product Definition, FD - Full Development, ISD - In Service Demo

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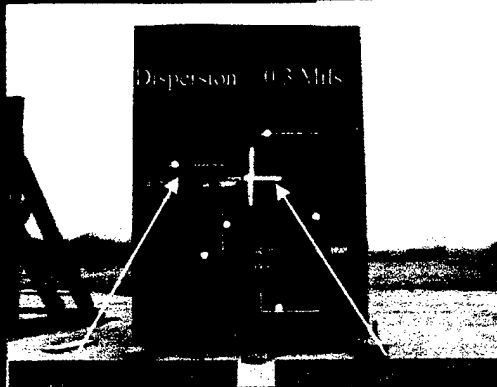
## Product Performance - Ammunition Comparison



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# APFSDS Demonstration

40mm CTWS at 1500m



APFSDS service round  
Loose fill propellant  
Tungsten rod  
APFSDS stretch round  
Compressed charge  
Tungsten rod  
Target 1  
150mm RHA plus  
Behind Armor Pack  
Target 2  
160 RHA (20deg) plus  
Behind Armor Pack

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# CTWS Stretch Potential



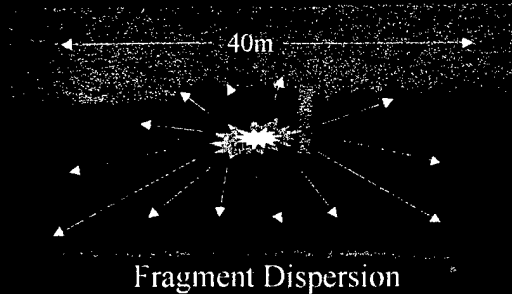
Compressed Charge



CT Ammunition has a proven stretch path within the same calibre:  
Compressed charge, composite sabots, fibrous tungsten

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## GPR Air Burst Demonstration



Video Clip

Burst of GPR at 200  
shots min CT2000

- Range 1450 meters
- Height of burst 5m
- Target area 30mx25m
- Fragment penetration  
equiv. 7mm RHA
- 3 round burst at  
Helicopter target
- 1st round 5m in front
- 2m range dispersion
- Target 1500m

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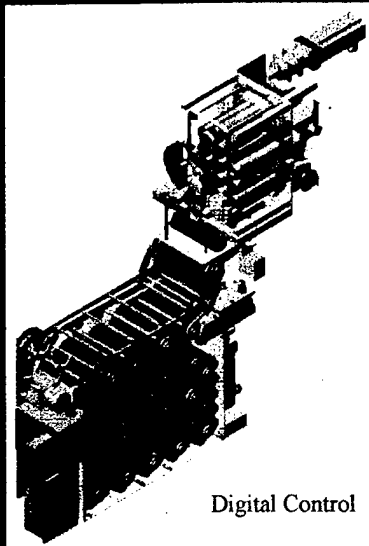
## Integration Benefits



Proven technology  
Low risk  
High reliability  
Ease of integration

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## Ammunition Handling System

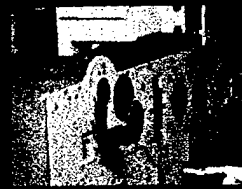


Digital Control

Video Clip



40mm CT Cannon



APESDS

GPR

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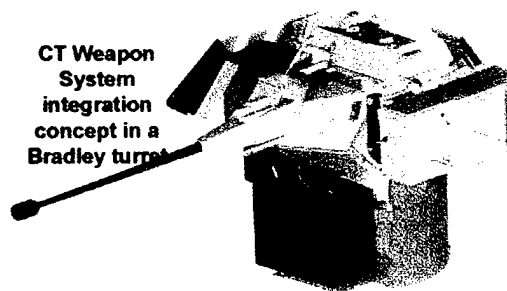
## Integration Concepts



40mm CTWS Remote Gun Station concept,  
high lethality with high survivability

CTWS is a  
modular design  
with integration  
capability into a  
wide range of  
AFV's

CT Weapon  
System  
integration  
concept in a  
Bradley turret



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## Traditional System Approach

**Risk ?**

**Vehicle System  
Integrator**

**Cost ?**



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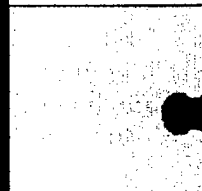
## Innovative Systems Approach

**Managed  
Risk**

**Vehicle System  
Integrator**

**Controlled  
Cost**

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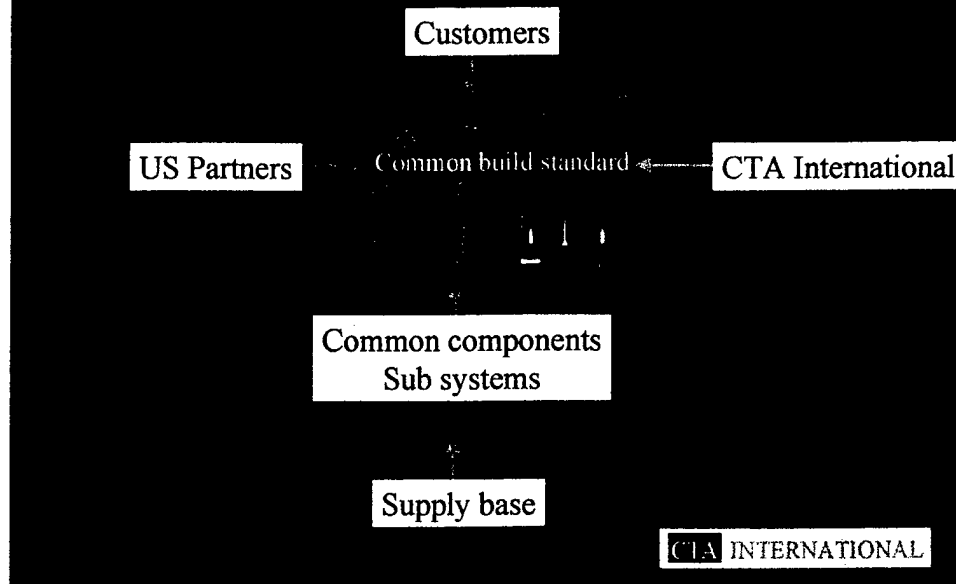


**Elevating  
mass**

**Ammunition**

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## Partnerships



## Tracer/Scout is the lead customer



CTWS optimized to meet Tracer/Scout requirements

Program phasing aligned to Tracer/Scout

Technically proven and verified by UK MoD

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## Product Maturity

Technology demonstrated

Full development programme underway

Company qualification process supported by UK Mod  
Ordnance Board

ISD Armour threat defeat demonstrated

GPR effective with time burst fuzing demonstrated

Linkless Feed system technology demonstrated

Stretch Path demonstrated

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## Affordability



Minimal qualification cost

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## Affordability

Acquisition cost – 10% less

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## Affordability

Lifetime support cost – 40% less

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## Affordability

Recycling

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## Affordability

MLI cost – 50% less

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Affordability

Demilitarisation

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Affordability

CTWS is the affordable solution  
for Tracer/Scout

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## CTWS Benefits of Ownership

Product performance

Product maturity

Affordability

Integration benefits

System approach



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## Benefits to CTAI Customers/Partners

CTWS can, through innovation and investment, deliver at low risk:

- Reliability
- Affordability
- Performance
- Full life support

Government agencies can, through acquisition reform and sound scientific advice deliver:

- Acceptance of new technologies
- Updated qualification procedures



### 40mm CTWS Low Risk!

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